PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	03 AUG 2006
Applicant's or agent's file reference 689290.233	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US04/42406	16 December 2004 (16.12.2004)	22 December 2003 (22.12.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(8): **C12Q 1/00(2006.01);C07K 1/00(2006.01),16/00(2006.01)**
USPC: 435/4;530/350,387.1

Applicant

AVALON PHARMACEUTICALS

1. This opinion contains indications relating to the following items:

- ☒ Box No. I — Basis of the opinion
- ☐ Box No. II — Priority
- ☐ Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV — Lack of unity of invention
- ☒ Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI — Certain documents cited
- ☐ Box No. VII — Certain defects in the international application
- ☐ Box No. VIII — Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	11 May 2006 (11.05.2006)	Jeffrey Siew Telephone No. 571-272-1600

Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/42406

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ on paper

☐ in electronic form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in electronic form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/42406

Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 12	YES
	Claims NONE	NO
Inventive step (IS)	Claims 1-11, 13-35	YES
	Claims NONE	NO
Industrial applicability (IA)	Claims NONE	YES
	Claims NONE	NO

2. Citations and explanations:

Claims 1-33 lack an inventive step under PCT Article 33(3) as being obvious over Pastan et al., (WO2004/092213).

Pastan et al., teach a protein, SV-NGEP polypeptide, which is 100% identical to SEQ ID NO: 5 from amino acid residues 5-859 as evidenced by sequence search (attached, SEQ ID NO: 1, page 21-22). Pastan et al., SV-NGEP protein is prostate cancer related and abnormally expressed by prostate cancer cells (example 5). Pastan et al., teach antibodies and antibody fragments to the protein (page 31-39). Pastan et al., teach a method of using the protein for treating cancer by inducing immune response (page 39-46). Pastan et al., teach diagnostic method of using the protein polypeptide or polynucleotide by abnormal expression of the protein in cancer cells (page 52, example 5-6).

It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to use the DNA, protein, or antibody for diagnosing or treating cancer. One of ordinary skill in the art would have been motivated with a reasonable expectation of success to identify agent that modulate the activity of the protein. One of ordinary skill in the art would have been motivated with a reasonable expectation of success to use the protein, antibody to diagnose and treating the cancer abnormally expressing the gene and use the a method to modulate the protein expression because that Pastan et al., have shown the protein, the gene, the antibody, and the method of using the protein in diagnosing the cancer and treating the prostate cancer